TOSHIBA

SERVICE MANUAL

LCD Color Television

42AV501P

Ver. 2.01

This model is classified as a green product (*1), as indicated by the underlined serial number. This Service Manual describes replacement parts for the green product. When repairing this green product, use the part(s) described in this manual and lead-free solder (*2).
For (*1) and (*2), refer to **GREEN PRODUCT PROCUREMENT** and **LEAD-FREE SOLDER**.

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LEAD-FREE SOLDER

This product is manufactured using lead-free solder as a part of a movement within the consumer products industry at large to be environmentally responsible. Lead-free solder must be used in the servicing and repair of this product.

WARNING: This product is manufactured using lead free solder.
DO NOT USE LEAD BASED SOLDER TO REPAIR THIS PRODUCT!

The melting temperature of lead-free solder is higher than that of leaded solder by 86ºF to 104ºF (30ºC to 40ºC). Use of a soldering iron designed for lead-based solders to repair product made with lead-free solder may result in damage to the component and or PCB being soldered. Great care should be made to ensure high-quality soldering when servicing this product especially when soldering large components, through-hole pins, and on PCBs as the level of heat required to melt lead-free solder is high.

IMPORTANT NOTICE

WARNING:

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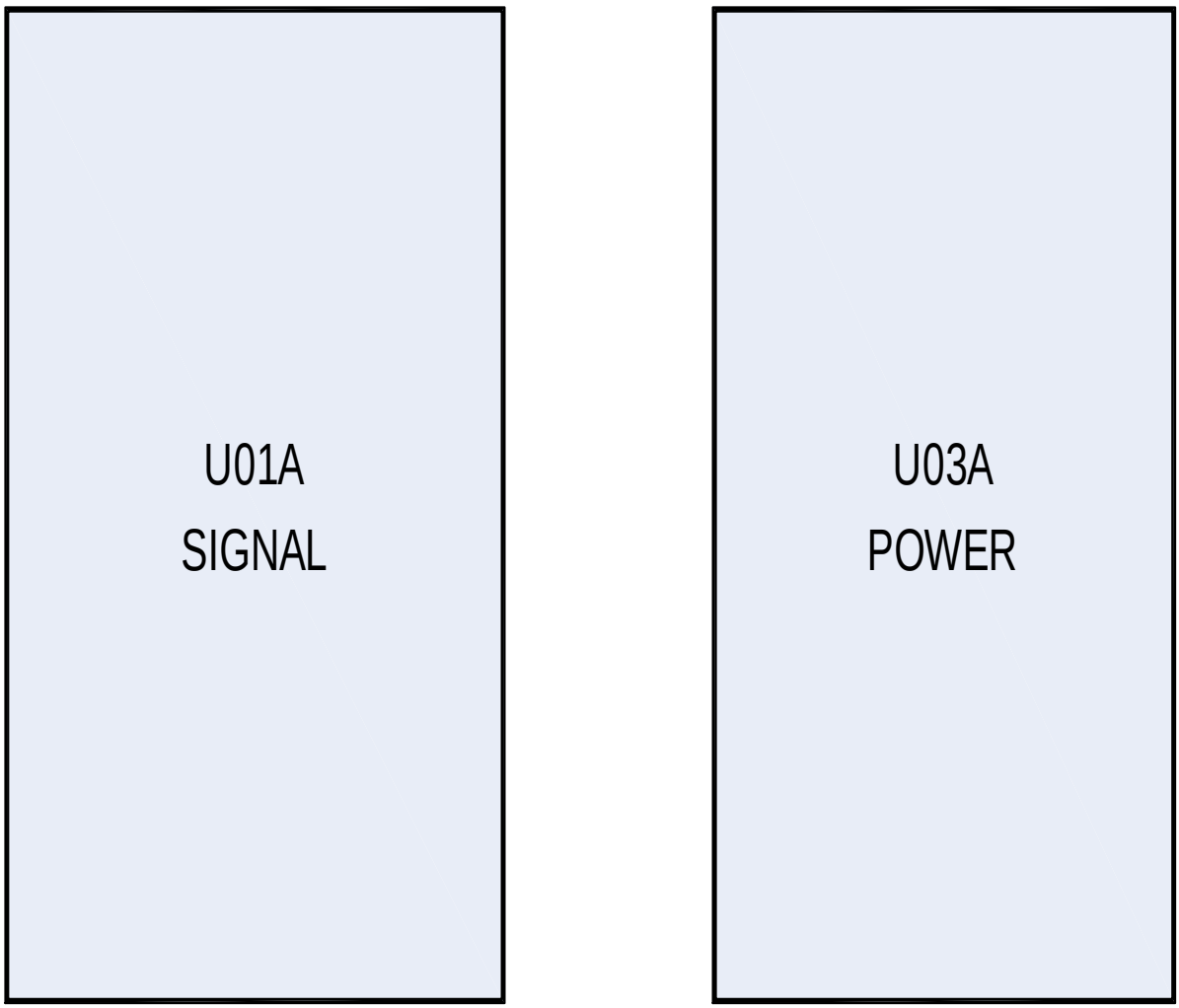
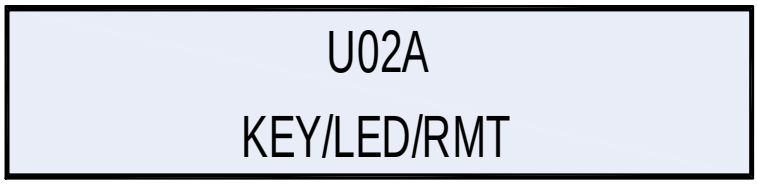
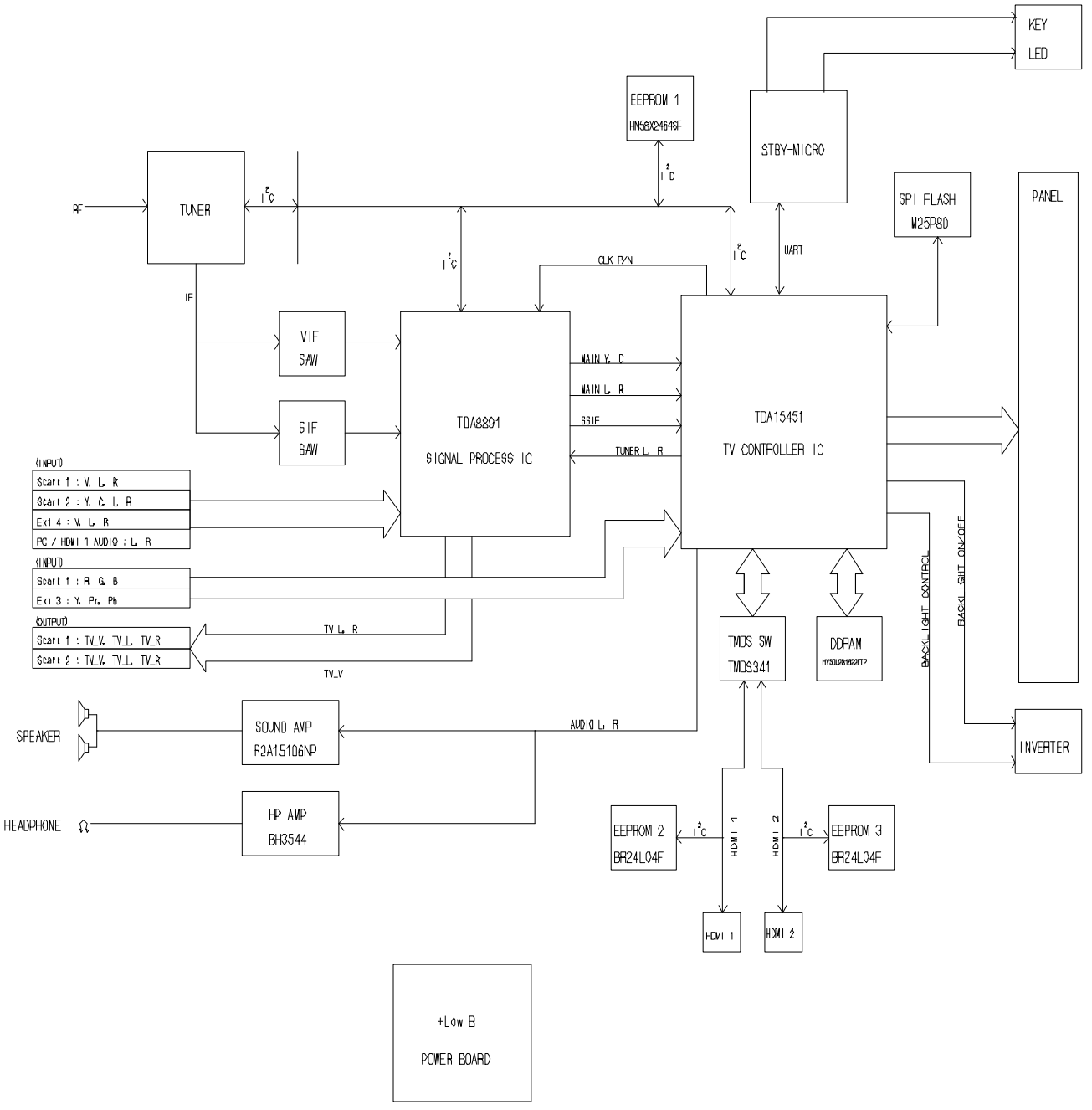
PCB LAYOUT





BLOCK DIAGRAM



SAFETY INSTRUCTION

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" INSTRUCTIONS BELOW.

Safety Precaution

WARNING: SERVICING SHOULD NOT BE ATTEMPTED BY ANYONE UNFAMILIAR WITH THE NECESSARY PRECAUTIONS ON THIS RECEIVER. THE FOLLOWING ARE THE NECESSARY PRECAUTIONS TO BE OBSERVED BEFORE SERVICING THIS CHASSIS.

1. An isolation transformer should be connected in the power line between the receiver and the AC line before any service is performed on the receiver.

2. Always disconnect the power plug before any disassembling of the product. It may result in electrical shock.

3. When replacing a chassis in the cabinet, always be certain that all the protective devices are put back in place, such as nonmetallic control knobs, insulating covers, shields, isolation resistor-capacitor network, etc.

4. Always keep tools, components of the product, etc away from the children, These items may cause injury to children.

5. Depending on the model, use an isolation transformer or wear suitable gloves when servicing with the power on, and disconnect the power plug to avoid electrical shock when replacing parts. In some cases, alternating current is also impressed in the chassis, so electrical shock is possible if the chassis is contacted with the power on.

6. Always use the replacement parts specified for the particular model when making repairs. The parts used in products require special safety characteristics such as

inflammability, voltage resistance, etc. therefore, use only replacement parts that have these same characteristics. Use only the specified parts when the ⚠ mark is indicated in the circuit diagram or parts list.

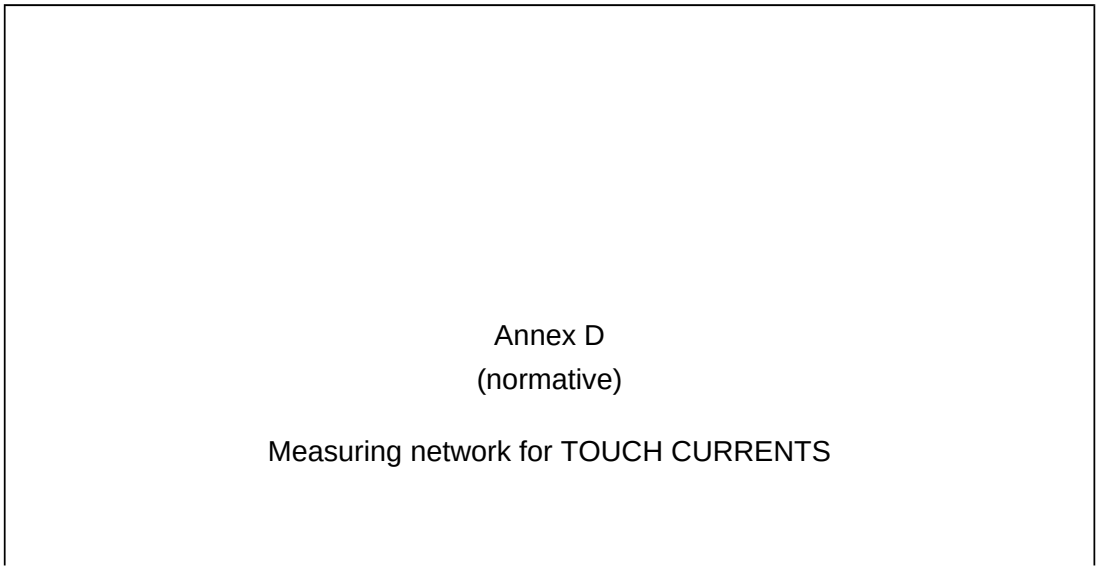
7. Parts mounting and routing dressing of wirings should be the same as that used originally. For safety purposes, insulating materials such as isolation tube or tape are sometimes used and printed circuit boards are sometimes mounted floating. Also make sure that wirings is routed and clamped to avoid parts that generate heat and which use high voltage. Always follow the manufactured wiring routes / dressings.

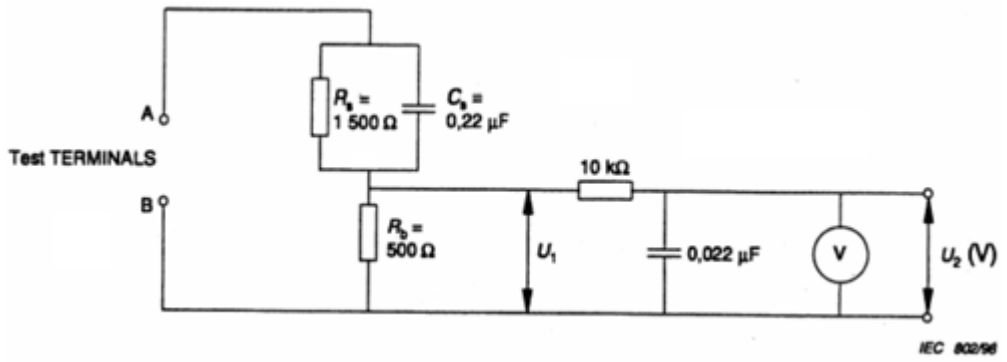
8. Always ensure that all internal wirings are in accordance before re-assembling the external casing after a repairing completed. Do not allow internal wiring to be pinched by cabinets, panels, etc. Any error in reassembly or wiring can result in electrical leakage, flame, etc., and may be hazardous.

9. NEVER remodel the product in any way. Remodeling can result in improper operation, malfunction, or electrical leakage and flame, which may be hazardous.

10. Touch current check. (After completing the work, measure touch current to prevent an electric shock.)

    - Plug the AC cord directly into the AC outlet. Do NOT use an isolation transformer for this check.
    - Connect a measuring network for touch currents between each exposed metallic part on the set and a good earth ground such as a water pipe.





Resistance values in orms (Ω).

V: Voltmeter or oscilloscope
(r.m.s. or peak reading)

Input resistance : ≧ 1 MΩ
Input capacitance : ≦ 200 pF
Frequency range : 15 Hz to 1 MHz and d.c. respectively

Note: Appropriate measures should be taken to obtain the correct value in case of non sinusoidal waveforms.

The measuring instrument is calibrated by comparing the frequency factor of U_2 with the solid line in figure F.2 of IEC 60990 at various frequencies. A calibration curve is constructed showing the deviation of U_2 from the ideal curve as a function of frequency.

TOUCH CURRENT = U_2/500 (peak value).

ı The potential at any point (TOUCH CURRENT) expressed as voltage U_1 and U_2 does not exceed the following value:

The part or contact of a TERMINAL is not HAZARDOUS LIVE if:

a) The open-circuit voltage should not exceed 35 V (peak) a.c. or 60 V d.c. or, if a) is not met.
b) The measurement of the TOUCH CURRENT shall be carried out in accordance with IEC 60990, with the measuring network described in **Annex D** of this standard.

The TOUCH CURRENT expressed as voltages U_1 and U_2, does not exceed the following values:
- for a.c. : U_1 = 35 V (peak) and U_2 = 0.35 V (peak);
- for d.c. : U_1 = 1.0 V

Note: The limit values of U_2 = 0.35 V (peak) for a.c. and U_1 = 1.0 V for d.c. correspond to the values 0.7 mA (peak) a.c. and 2.0 mA d.c.

Product Safety Notice

Many electrical and mechanical parts in this chassis have special safety-related characteristics. These characteristics are often passed unnoticed by a visual inspection and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by the international hazard symbols on the schematic diagram and the parts list.
Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create electrical shock, fire, or other hazards.

SAFETY INSTRUCTION

Handling the LCD Module

Safety Precaution

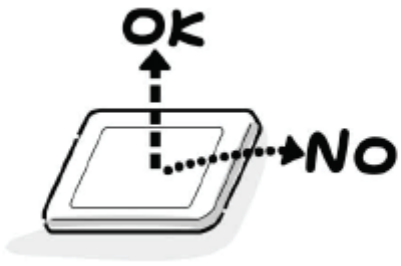
In the event that the screen is damaged or the liquid crystal (fluid) leaks, do not breathe in or drink this fluid.
Also, never touch this fluid. Such actions could cause toxicity or skin irritation. If this fluid should enter the mouth, rinse the mouth thoroughly with water. If the fluid should contact the skin or clothing, wipe off with alcohol, etc., and rinse thoroughly with water. If the fluid should enter the eyes, immediately rinse the eyes thoroughly with running water.

Precautions for Handling the LCD Module

CAUTION: The metal edges of the LCD module are sharp, handle it with care.

The LCD module can easily be damaged during disassembly or reassembly; therefore, always observe the following precautions when handling the module.

1. When attaching the LCD module to the LCD cover, position it appropriately and fasten at the position where the display can be viewed most conveniently.



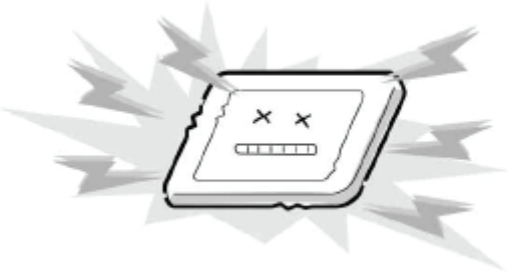
2. Carefully align the holes at all four corners of the LCD module with the corresponding holes in the LCD cover and fasten with screws. Do not strongly push on the module because any impact can adversely affect the performance. Also use caution when handling the polarized screen because it can easily be damaged.

3. If the panel surface becomes soiled, wipe with cotton or a soft cloth. If this does not remove the soiling, breathe on the surface and then wipe again.
   If the panel surface is extremely solied, use a CRT cleaner as a cleaner. Wipe off the panel surface by drop the cleaner on the cloth. Do not drop the cleaner on the panel. Pay attention not to scratch the panel surface.

4. Leaving water or other fluids on the panel screen for an extended period of time can result in discoloration or stripes. Immediately remove any type of fluid from the screen.

5. Glass is used in the panel, so do not drop or strike with hard objects. Such actions can damage the panel.

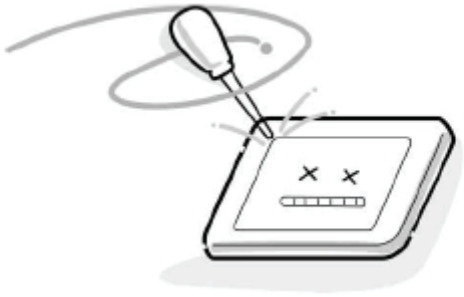
6. CMOS-LSI circuitry is used in the LCD module, so avoid damage due to static electricity. When handling the module, use a wrist ground or anchor ground.



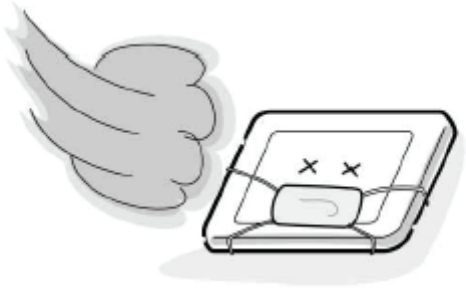
7. Do not expose the LCD module to direct sunlight or strong ultraviolet rays for an extended period of time.

8. Do not store the LCD module below the temperature conditions described in the specifications. Failure to do so could result in freezing of the liquid crystal due to cold air or loss of resilience or other damage.

9. Do not disassemble the LCD module. Such actions could result in improper operation.



10. When transporting the LCD module, do not use packing containing epoxy resin (amine) or silicon resin (alcohol or oxim). The gas generated by these materials can cause loss of polarity.



GREEN PRODUCT PROCUREMENT

The EC is actively promoting the WEEE & RoHS Directives that define standards for recycling and reuse of Waste Electrical and Electronic Equipment and for the Restriction of the use of certain Hazardous Substances. From July 1, 2006, the RoHS Directive will prohibit any marketing of new products containing the restricted substances.

Increasing attention is given to issues related to the global environmental. Toshiba Corporation recognizes environmental protection as a key management tasks, and is doing its utmost to enhance and improve the quality and scope of its environmental activities. In line with this, Toshiba proactively promotes Green Procurement, and seeks to purchase and use products, parts and materials that have low environmental impacts.

Green procurement of parts is not only confined to manufacture. The same green parts used in manufacture must also be used as replacement parts.

SCHEMATIC DIAGRAM

Precaution

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION" FOR DIRECT VIEW CTV ONLY, "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" OF THIS MANUAL.

CAUTION: The international hazard symbols "⚠" in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list.

The mounting position of replacements is to be identical with originals. Before replacing any of these components, read carefully the SAFETY PRECAUTION and PRODUCT SAFETY NOTICE.

Do not degrade the safety of the receiver through improper servicing.

Note:

1. RESISTOR
   Resistance is shown in ohm [K=1,000, M=1,000,000]. All resistors are 1/6 W and 5 % tolerance carbon resistor, unless otherwise noted as the following marks.

   1/2R : Metal or Metal oxide of 1/2 watt
   1/2S : Carbon composition of 1/2 watt
   1RF : Fuse resistor of 1 watt
   10 W : Cement of 10 watt
   K : ±10 %
   G : ±2 %
   F : ±1 %

2. CAPACITOR
   Unless otherwise noted in schematic, all capacitor values less than 1 are expressed in µF, and the values more than 1 in pF.
   All capacitors are ceramic 50 V, unless otherwise noted as the following marks.

+ = Electrolytic capacitor
M = Mylar capacitor

3. The parts indicated with "⚠" have special characteristics, and should be replaced with identical parts only.

4. Voltages read with DIGITAL MULTI-METER from point indicated to chassis ground, using a color bar signal with all controls at normal, line voltage at nominal AC volts.

5. Waveforms are taken receiving color bar signal with enough sensitivity.

6. Voltage reading shown are nominal values and may vary ±20 % except H.V.

GND 1 >>>> MEMORY GND
GND 3 >>>> LVDS GND
GND D >>>> TMDS GND
GND >>>> CHASIS GND

QA100
TV Controller IC
TDA15471

U01AS SIGNAL [5] LOC_TOP (PE0484)

U02A KEY/RMT/LED [1] KEY & LED (PE0486)

for AV505D SERIES

AV505D

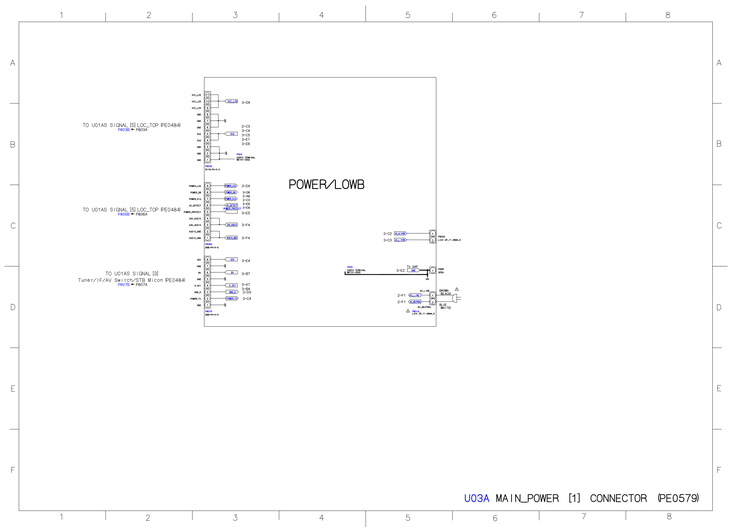
AV500

To UCHAS SIGNAL 핀

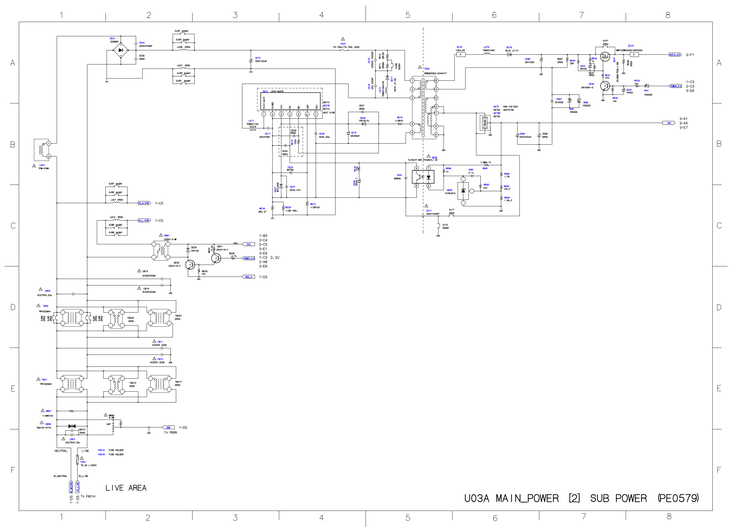
Turn-r/r/AV 3W (12V/573) 핀 Pitch PE0486

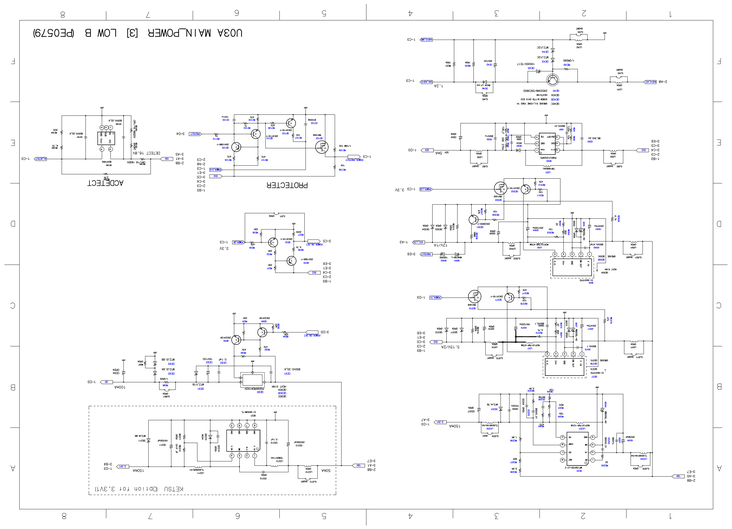
AV505D AV500

Apply	Apply
42 pin connector	8 pin connector

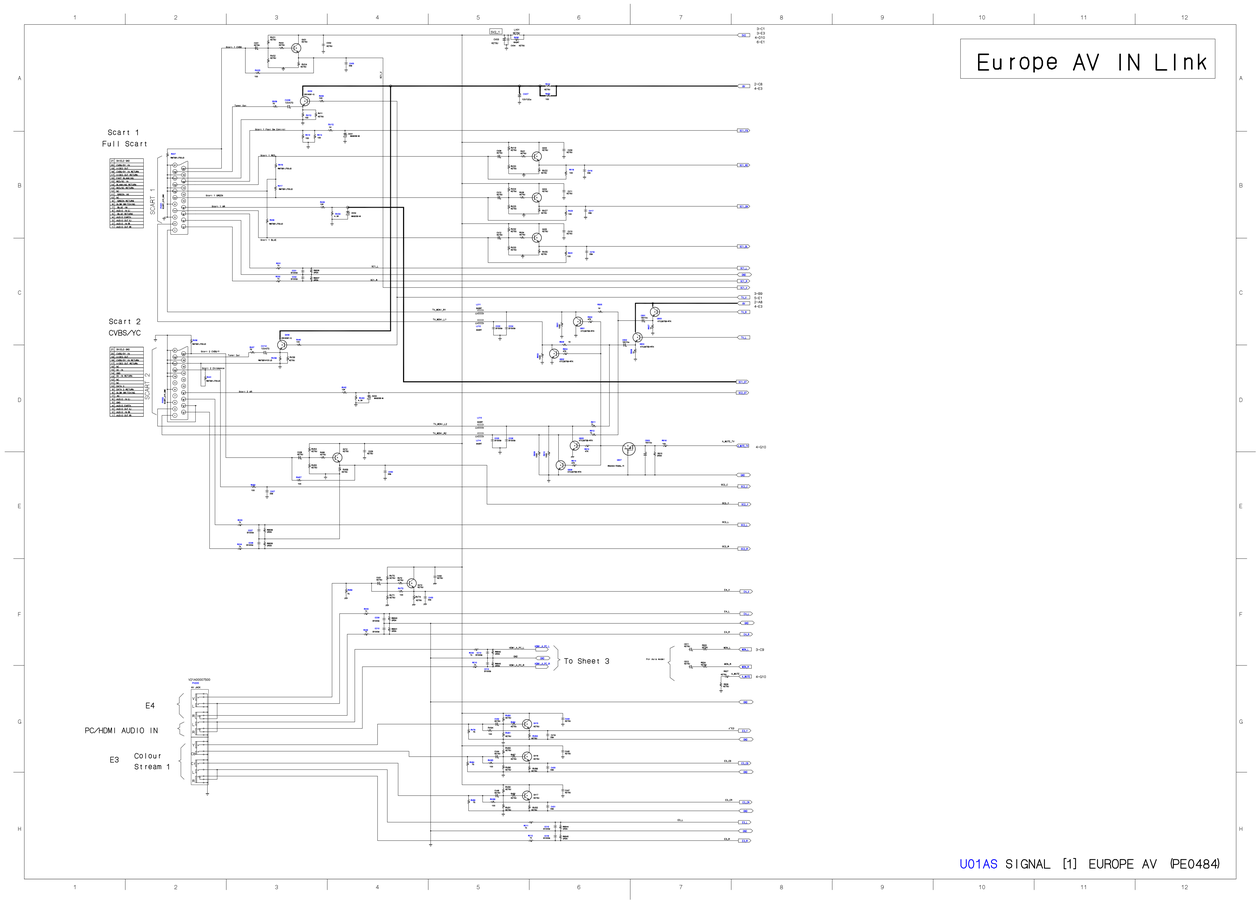


U03A MAIN_POWER [1] CONNECTOR (PE0579)


LIVE AREA
U03A MAIN_POWER [2] SUB POWER (PE0579)

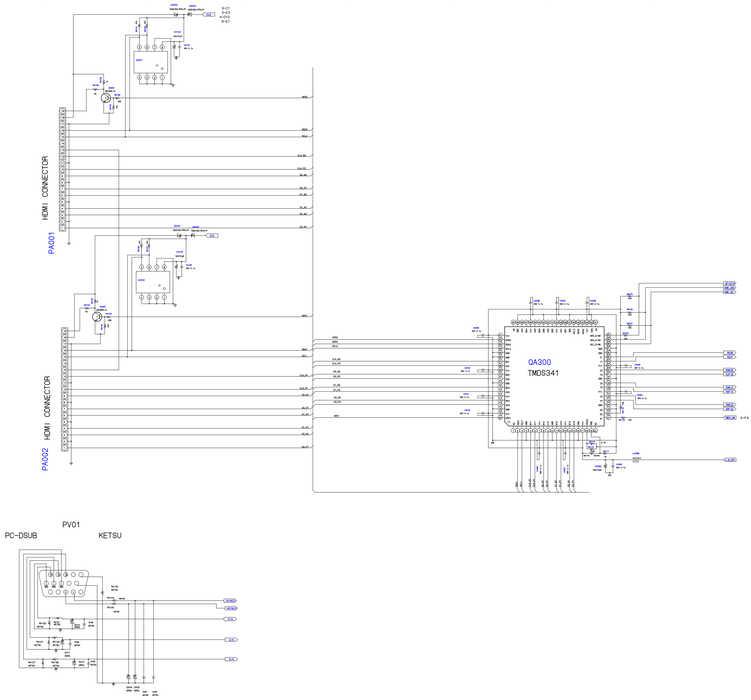

U03A MAIN_POWER [3] LOW B (PE0579)
PROTECTER
ADC_TECT
MCTSU Option for 3.3V!!

Europe AV IN LInk

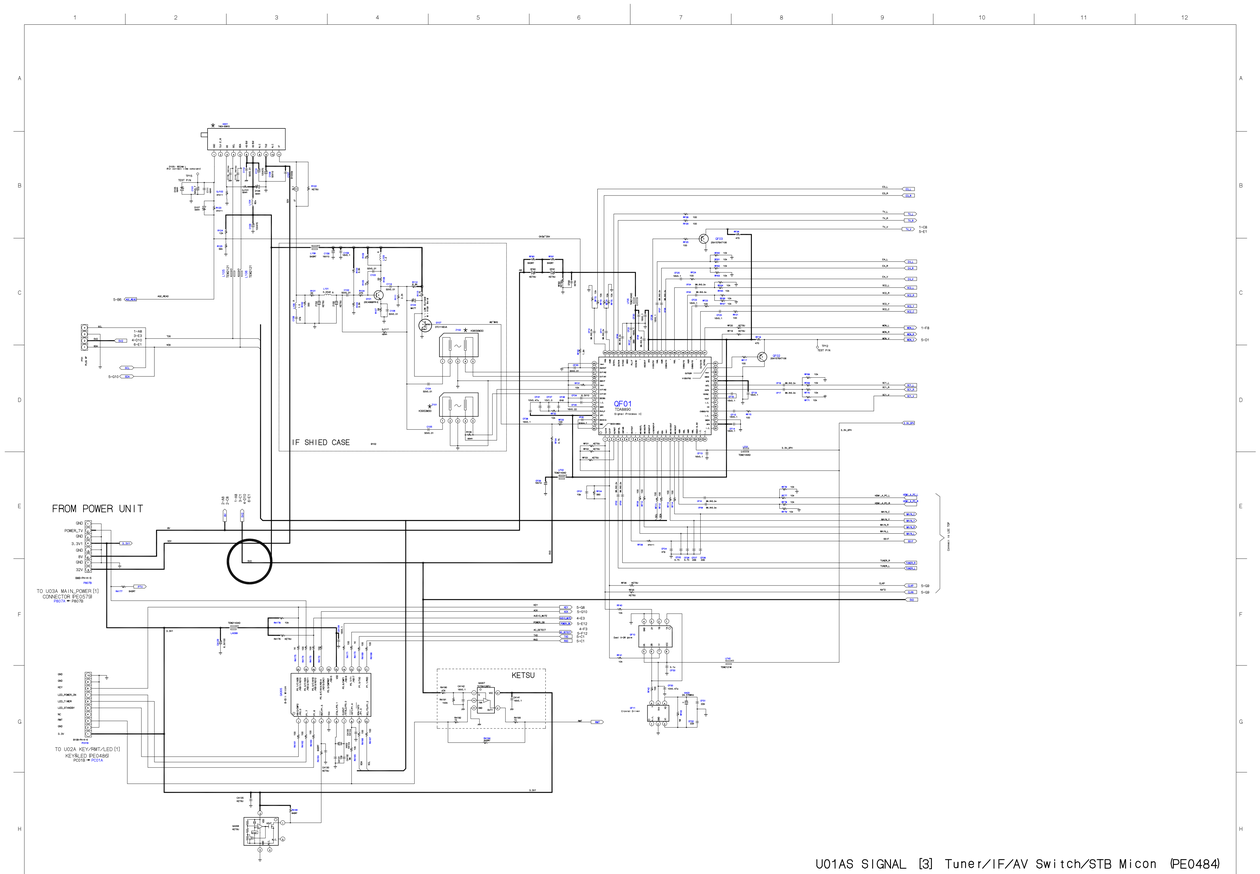


U01AS SIGNAL [1] EUROPE AV (PE0484)

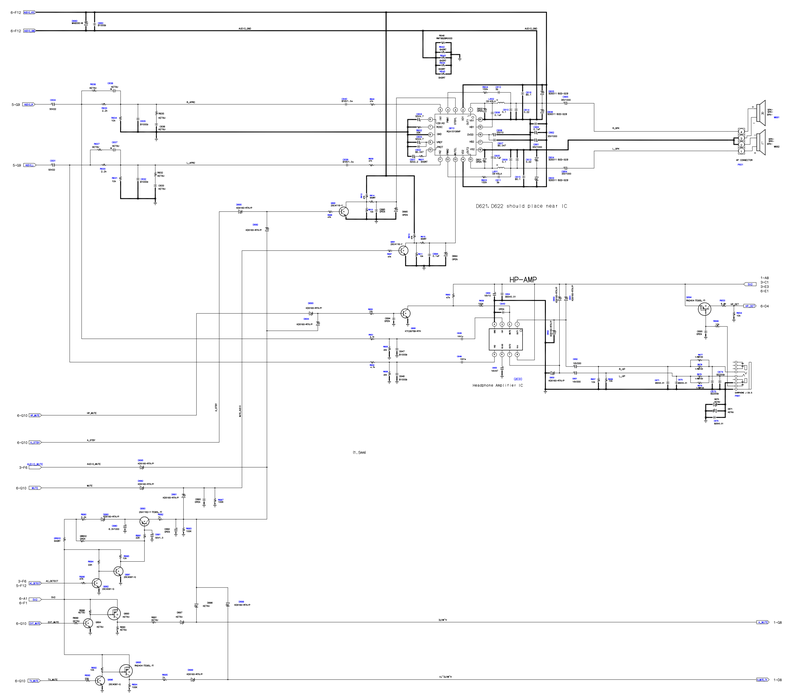
HDMI / PC INPUT



U01AS SIGNAL [2] HDMI / PC INPUT (PE0484)

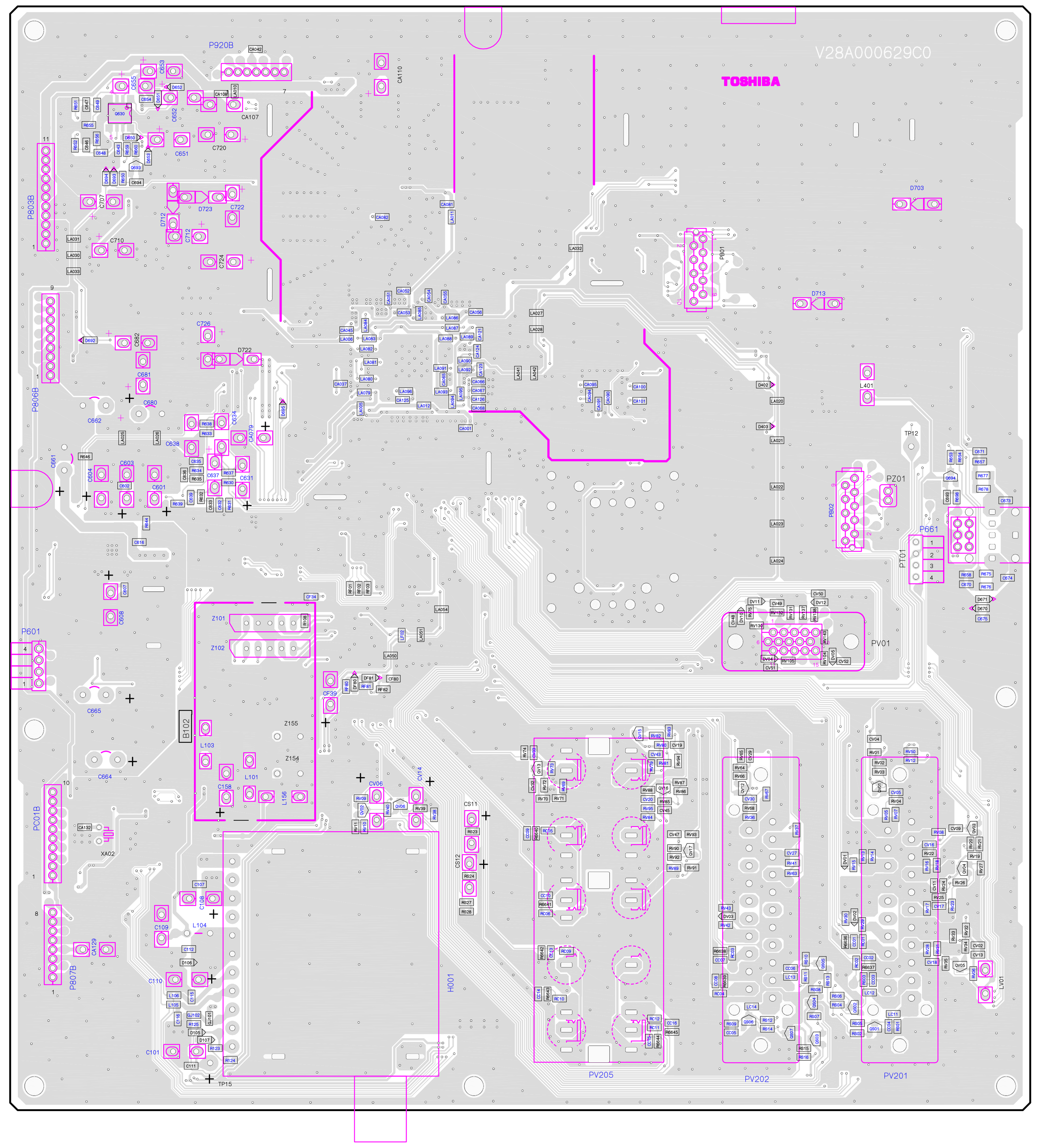


U01AS SIGNAL [3] Tuner/IF/AV Switch/STB Micon (PE0484)

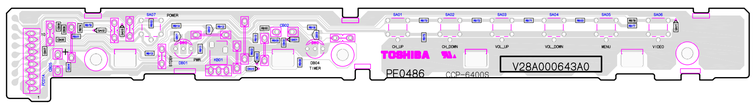


U01AS SIGNAL [4] HP / Class- D Audio (PE0484)

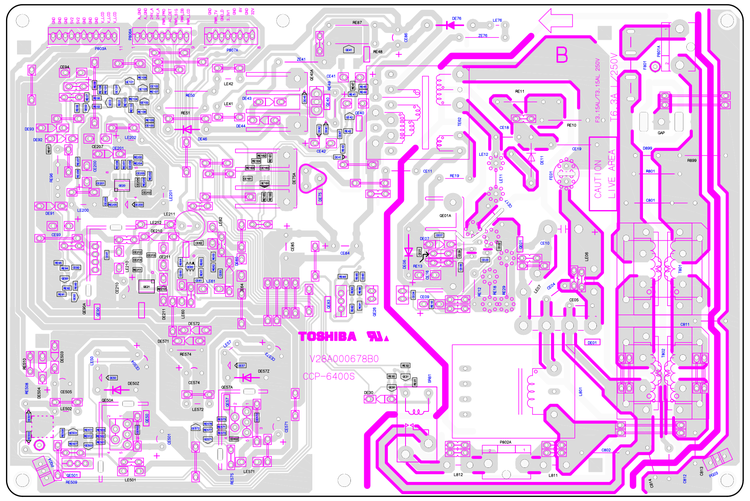
U01AS SIGNAL [Bottom] (PE0484)



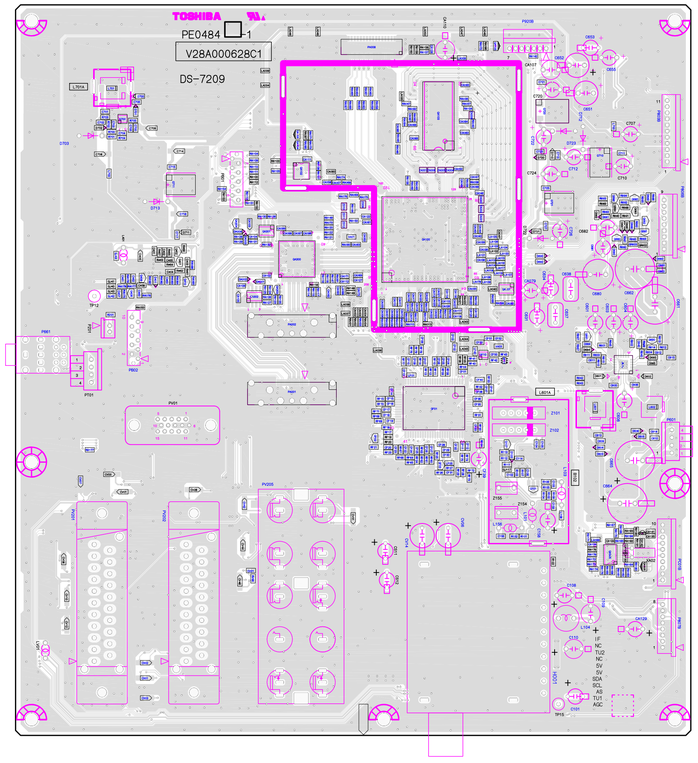
U02A KEY/RMT/LED [Bottom] (PE0486)



U03A MAIN_POWER [Bottom] (PE0579)



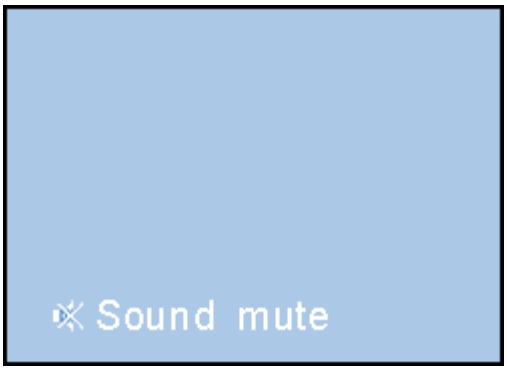
U01AS SIGNAL [Top] (PE0484)



ADJUSTMENT

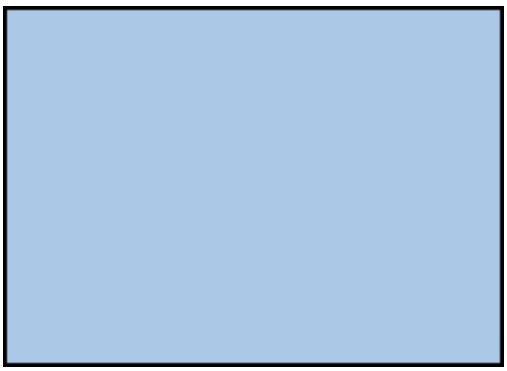
Service Mode

Entering to Service Mode



1. Set VOLUME to minimum and press button once on remote control.

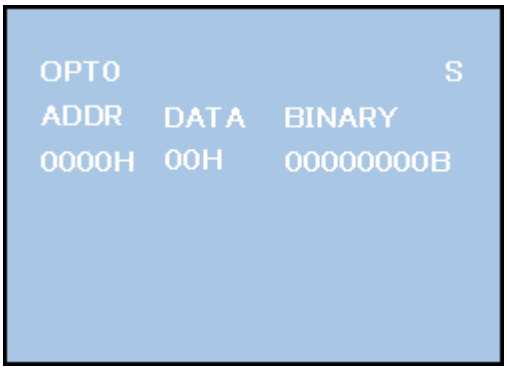
↓



2. Press button again and hold button down.

↓

Service Mode display

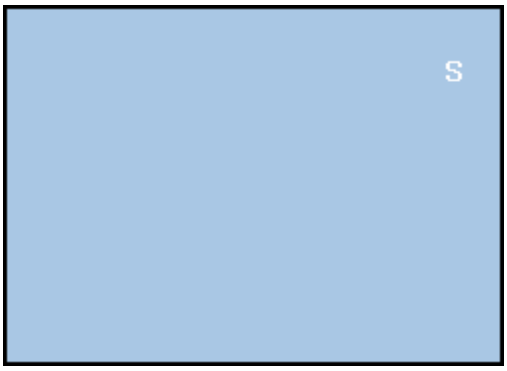


3. While holding the button, press MENU button on TV set.

Displaying the Adjustment Menu

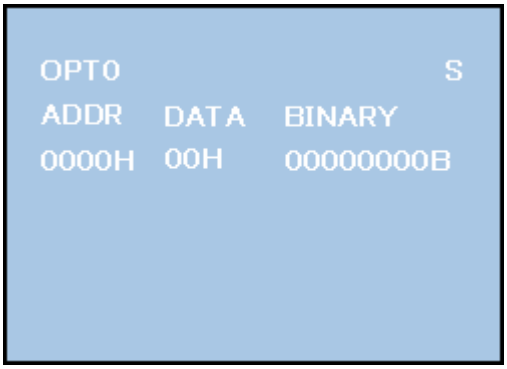
Press MENU button on TV.

Service Mode



Press ↑ ↓ Press

Adjustment Mode



Key Function in the Service Mode

The following key entry during display of adjustment menu provides special functions.

CAUTION: Never try to perform initialization unless you have changed the memory IC.

	button (on remote control)

Test signal selection	
Selection of the adjustment items	CH ▲/▼ (on TV or remote control)
Change of the data value	Volume +/- (on TV or remote control)
Adjustment menu mode ON/OFF	MENU button (on TV)
"RCUT" selection	1 button
"GCUT" selection	2 button
"BCUT" selection	3 button
"CNTX" selection	4 button
"COLC" selection	5 button
"TNTC" selection	6 button
Automatic A/D Adjustment (PC, Component, Composite (PAL, NTSC))	7 button
Self diagnostic display ON/OFF	9 button

Selecting the Adjusting Item

Every pressing of CH ▲ button in the service mode changes the adjustment items in the order of table below. (▼ button for reverse order)

SETTING & ADJUSTING DATA

[SERVICE MODE]

ADJUSTING ITEMS AND DATA IN THE SERVICE MODE:

Note:

The image system data of RCUT-BDRV is different by each image format.
The PAL value is indicated in the table.
Never adjust H.POS and V.POS except PAL/WIDE mode.

Item	Name of adjustment
RCUT	R CUT OFF

GCUT	G CUT OFF
BCUT	B CUT OFF
RDRV	R DRIVE
GDRV	G DRIVE
BDRV	B DRIVE
BRTC	BRIGHTNESS CENTER
COLC	COLOR CENTER
TNTC	BASE BAND TINT
CNTX	CONTRAST MAX
VOLUX	MAX VOLUME LIMITED
OPT1	TV SET OPTION 1
OPT2	TV SET OPTION 2
OPT3	TV SET OPTION 3
OPT4	TV SET OPTION 4 (PANEL OPT DATA FOR VENDOR)
OPT5	TV SET OPTION 5 (PANEL OPT DATA FOR SIZE)
OPT6	TV SET OPTION 6 (HOTEL MODE)
OPT7	TV SET OPTION 7 (HOTEL MODE)
OPT8	TV SET OPTION 8 (HOTEL MODE)
ID	PANEL

Factory preset data will be loaded after setting PANEL data.
(Refer to setting data of Main board.)

Adjusting the Data

Pressing of VOLUME +/- button will change the value of data in the range from 00H to FFH. The variable range depends on the adjusting item.

Setting Panel Option Data

Panel option data is subject to OPT4 and OPT5.
Enter to service mode and select menu of OPT4 or OPT5 by pressing P▲ or P▼ during

display of adjustment menu. After selecting OPT4 or OPT5, press + or - to set OPT4 or OPT5 value as table below.

Panel option data

Series		Model name	Panel vendor	OPT4 value	OPT5 value
AV501P	EU	32AV501P	LPL	0x01	0x05
			IPS	0x07	0x05
		37AV501P	LPL	0x01	0x06
			IPS	0x07	0x06
		42AV501P	LPL	0x01	0x07

OPT4

Ex. OPT4 value 0x05 indicates that panel vendor is AUO AMVA.

		OPT4							
		D7 (bit7)	D6 (bit6)	D5 (bit5)	D4 (bit4)	D3 (bit3)	D2 (bit2)	D1 (bit1)	D0 (bit0)
Panel vendor	LPL	-	-	-	-	0	0	0	1
	SHP	-	-	-	-	0	0	1	0
	CMO	-	-	-	-	0	0	1	1
	AUO PMVA	-	-	-	-	0	1	0	0
	AUO AMVA	-	-	-	-	0	1	0	1
	SAMSUNG	-	-	-	-	0	1	1	0
	IPS	-	-	-	-	0	1	1	1

OPT5

Ex. OPT5 value 0x05 indicates that panel size is 32.

		OPT5							
		D7 (bit7)	D6 (bit6)	D5 (bit5)	D4 (bit4)	D3 (bit3)	D2 (bit2)	D1 (bit1)	D0 (bit0)
Size	32	-	-	-	-	0	1	0	1
	37	-	-	-	-	0	1	1	0
	42	-	-	-	-	0	1	1	1

Convert from Bit (Binary) to Hex

The table for converting from bit (D7-D0) to hex (0x**).

		BIT (Binary)			
High nibble		**D7**	**D6**	**D5**	**D4**
Low nibble		**D3**	**D2**	**D1**	**D0**
HEX	**0**	0	0	0	0
	1	0	0	0	**1**
	2	0	0	**1**	0
	3	0	0	**1**	**1**
	4	0	**1**	0	0
	5	0	**1**	0	**1**
	6	0	**1**	**1**	0
	7	0	**1**	**1**	**1**
	8	**1**	0	0	0
	9	**1**	0	0	**1**
	A	**1**	0	**1**	0
	B	**1**	0	**1**	**1**
	C	**1**	**1**	0	0
	D	**1**	**1**	0	**1**
	E	**1**	**1**	**1**	0
	F	**1**	**1**	**1**	**1**

E.g. If Bit D7-0 = 0**1**0**1** **1**0**1**0, Hex data is 0x**5A**.

Exit from Service Mode

Pressing POWER button to turn off the TV once.

Setting Data of Signal Unit

After replacing Main board, the following initialization is required.

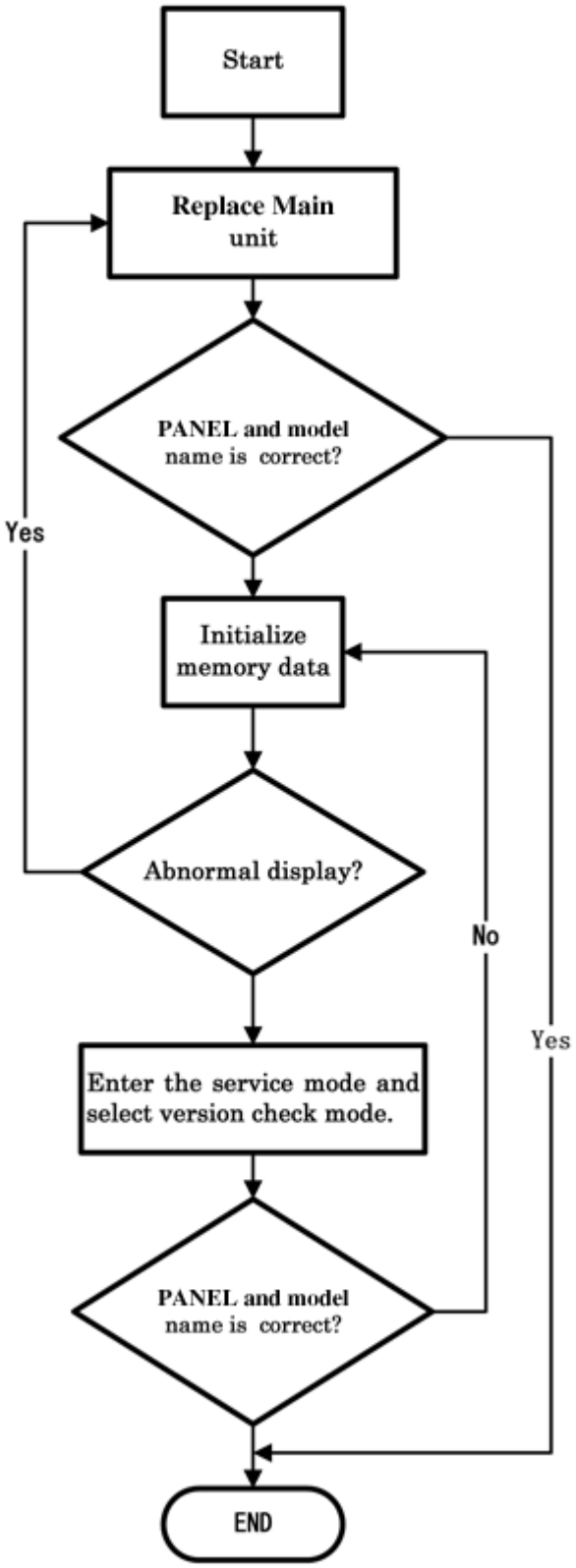
CAUTION: Whenever using new Main board to the set, setting the PANEL data according to Panel option data.

Note:
In case initialization by setting wrong PANEL is done, there is a possibility of abnormal display.

1) Check the picture carefully. If necessary, adjust any adjustment item above.
   Perform "Auto tune" on the owner's manual.

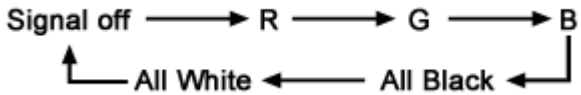
PANEL (HEX)	Model name	Panel vendor
0x01 or 0x04	32AV501P	IPS(old) or IPS(new)
0x02 or 0x05	37AV501P	IPS(old) or IPS(new)
0x03 or 0x06	42AV501P	LGD(old) or LGD(new)

Initializing Data setting flowchart after replacing the Signal Unit



Test Signal Selection

Every pressing of ⊕ button on the remote control changes the built-in test patterns on screen as described below in Service Mode.



Picture	Signal
	Red raster
	Green raster
	Blue raster
	All Black
	All White

Self Diagnostic Function

1. Press "9" button on remote control during display of adjustment menu in the service mode. The diagnosis will begin to check if interface among IC's is executed properly.
2. During diagnosis, the following displays are shown.

* Self check display and Item are subject to the models.

(1) Firmware :
Version information of microprocessor

(2) Time : Total hour of turn the TV on. (Unit : H)

(3) Bus line : -- "OK" is normal
SCL-GND (Red indication) : SCL-GND short circuit
SDA-GND (Red indication) : SDA-GND short circuit
SCL-SDA (Red indication) : SCL-SDA short circuit

(4) Bus cont : --- "OK" is normal.
NG is abnormal (Red indication).
When the abnormal status is detected, type name of semiconductor is indicated in red colour.

(5) Block
UV : TV reception mode
V1 - V4 : VIDEO 1-4 input mode

UV	RF
V1	1 SCART 1
V2	2 SCART 2
V3	3 COMPONENT
V4	4 COMPOSITE
HDMI1	HDMI1 input
HDMI2	HDMI2 input

Version Check Mode

1. Press "9" button twice on remote control during display of adjustment menu in the service mode.
   The version of main MPU will be checked.

2. During Version Check, the following displays are shown.

* Version check display and Item are subject to the models.

(1) MAIN MPU :
Version information of microprocessor

(2) EEPROM :
Version information of EEPROM : Display 1 byte data.

(3) SUB MPU :
Version information of SUB MPU : Display 1 byte data.

(4) OPTION :
Option information : Display six numbers of 1 byte data.

(5) A/D Adjust
A/D adjustment item.
--COMP : Component input
--RGB : PC input
--OK : A/D adjustment set correctly.

--NG : A/D adjustment set incorrect.

-- : A/D adjustment is not needed. Because its picture format isn't used.

(6) RF AGC adjustment value
RF Adjustment Value is shown.

(7) Model Name
Model name information (ascii code). : Display 7 byte data.

(8) LCD Panel Vendor information display
The following Panel Vendor (DDD) and screen size (00) are displayed.
Example : IPS-32 indicates that Vendor is IPS and Screen Size is 32 inch

Status Check Mode

1. Press "9" button thrice on remote control during display of adjustment menu in the service mode.
   The status of this model will be checked.

2. During Status Check, the following displays are shown.

* Status check display and Item are subject to the models.

(1) MAIN :
Main source information :
Display RF position number (0 - 99) on the main screen, or Input Source (EXT1/2/3/HDMI etc.)

(2) MAIN FORMAT :

Display Video and PC format information

(3) MAIN PLL :

Main PLL information : Display 1 byte data at five.

(4) SCREEN SIZE :

Display the screen size as follows.

Exact Scan
Wide
Super Live 2
Cinema 2
4:3
Super Live 1
Cinema 1
Subtitle
14:9

Note:

Exact Scan is shown only for 1080p panel model with video input mode except pc.

(5) OTHER STATUS :

Other status information : Display three numbers of 2 byte data.

Setting Hotel Mode

Enter to service mode and select Hotel Mode menu by pressing P▲ or P▼.
After selecting Hotel Mode, press ◿ + to enter details setting in Hotel Mode.

To select menu, press P▲ or P▼ and press OK to enter the adjustment menu of table bellow.
To move the cursor in the adjustment, press ◿ + or ◿ -.

1. By pressing P▲ or P▼, OPT2 setting will change the value either 1 or 0 on selected items as follows;

OPT2

OPT2	FUNCTION DESCRIPTION	1	0 (Normal)
D7 (bit7)	- (no use)	-	-

D6 (bit6)	- (no use)	-	-
D5 (bit5)	FRONT Key	Disable	Enable
D4 (bit4)	All keys except input selector key (Video/TV)	Disable	Enable
D3 (bit3)	User remote control operation	Disable (Service mode and Supere User mode may possible to setting only)	Enable
D2 (bit2)	Disable SET UP MENU except language. (tuning SETUP MENU)	Disable (Display the language only)	Enable
D1 (bit1)	Disable SETUP MENU	Disable	Enable
D0 (bit0)	HOTEL Mode	On (Enable the setting of D1 from to D7)	Off (Normal)

VOLUX

Set VOLUX as following.

1) Set speaker volume to 100. (Any value is OK, but 100 is better to check sound level.)

2) Down value of VOLUX until finding suitable sound volume level.

VOLUX	FUNCTION DESCRIPTION	1	0 (Normal)
D7 (bit7) ~ D0 (bit0)	Max Limiter of Volume Control	0x00 ~ 0x7F (Normal: 0x7C)	

OPT6

OPT6	FUNCTION DESCRIPTION	1	0 (Normal)
D7 (bit7)	Enable mode that POS or VIDEO program number will be appeared in forced when turn ON the main power	Enable	Disable
D6 (bit6) ~ D0 (bit0)	POS or VIDEO program number	0 ~ 127 [decimal] (Normal: 0) POS number: 0 ~ 99 VIDEO number: 100 ~ 127 (DTV = 100, VIDEO = 101, VIDEO = 102..)	

		100 is used as ATV when DTV option is disable.

OPT7

OPT7	FUNCTION DESCRIPTION	1	0 (Normal)
D7 (bit7)	Enable mode that speaker volume will be set in forced when turn ON the main power	Enable	Disable
D6 (bit6) ~ D0 (bit0)	Forced speaker volume	0 ~ 100 [decimal] (Normal: 0) Value above 100 is no effect.	

OPT8

OPT8	FUNCTION DESCRIPTION	1	0 (Normal)
D7 (bit7) ~ D3 (bit3)	- (no use)	-	-
D2 (bit2)	Enable mode that picture mode will be set in forced when turn ON the main power	Enable (Display the language only)	Disable
D1 (bit1) ~ D0 (bit0)	Forced picture mode	0 [dec]: Dynamic (mode-1) (Normal) 1 [dec]: Standard (mode-2) 2 [dec]: Mild (mode-3) 3 [dec]: Memory (mode-M)	

LED Indication

The Green and Red LEDs on the TV (at the bottom center of the TV) indicate the TV's status, as described below.

- Red ON (solid) and Green OFF = The TV power cord is plugged in.
- Green ON (solid) and Red ON = The On timer is operating.

	LED Indication	Condition	Solution

1	Green is OFF; Red blinks continuously at 0.5-second intervals.	Abnormal operation	Turn OFF the TV and unplug the power cord. Plug the power cord in again and turn ON the TV.
2	Green is OFF; Red blinks continuously at 1-second intervals.	Abnormal operation of BUS line.	Turn OFF the TV and unplug the power cord. Plug the power cord in again and turn ON the TV.

PANEL IDENTIFICATION

Panel Identification

If the several panels are alternatively used in the same model without amending the model name, the identification marking will be shown at the last digit of the set serial number on the specification label on the back cover.

In servicing, do not alter the panel because several setting and parts are different.

Marking	Panel Vendor	Marking	Panel Vendor	Marking	Panel Vendor
A	AUO	J		S	SHARP
B		K	SAMSUNG	T	
C	CMO	L	LPL	U	
D		M		V	
E		N		W	
F		P		X	
G		Q		Y	
H	IPS	R		Z	

With this alternative use, some of key parts may differ and their combinations are indicated with the suffix marking on the location number in the part list (Miscellaneous).

e.g.

Location No.	Part No.	Description
B001A	75007869	LCD Panel, 32" LPL
B001B	75007870	LCD Panel, 32" AUO
MZ01A	75006036	LDVS Cable
MZ01B	75007893	LDVS Cable

PARTS LIST

Block : U02A KEY/RMT/LED (PE0486) 6

Location : Search

Parts No. : Search

Page : 1 / 2 Jump

Block		Location	Parts No.	Description > S M L
U02A KEY/RMT/LED (PE0486)	*	U02A	75010835	PC BOARD ASSY, PE0486A1, KEY/REM/LED
U02A KEY/RMT/LED (PE0486)		CB02	75005969	CAPACITOR ELECTROLYTIC 10V 221M, ESRE100ETC2
U02A KEY/RMT/LED (PE0486)		CB03	76100104	CAPACITOR, CERAMIC CHIP, 25V F 0.1UF Z
U02A KEY/RMT/LED (PE0486)		CB04	76100104	CAPACITOR, CERAMIC CHIP, 25V F 0.1UF Z
U02A KEY/RMT/LED (PE0486)		CB05	75005969	CAPACITOR ELECTROLYTIC 10V 221M, ESRE100ETC2
U02A KEY/RMT/LED (PE0486)		DB01	23358602	DIODE, LED RED-GRN, SPR-54MVWFLMN
U02A KEY/RMT/LED (PE0486)		DB22	75003561	DIODE, 1SS355-F(SPM)
U02A KEY/RMT/LED (PE0486)		DB23	75003561	DIODE, 1SS355-F(SPM)
U02A KEY/RMT/LED (PE0486)		GB01	75008542	DIODE, MM3Z6V8B(SPM)
U02A KEY/RMT/LED (PE0486)		KB01	75002236	IC, GP1UE261RKVF
U02A KEY/RMT/LED (PE0486)		PC01A	75010390	CONNECTOR, M242610R
U02A KEY/RMT/LED (PE0486)		QB01	23205360	TRANSISTOR, 2SA1980S-Y(BULK)
U02A KEY/RMT/LED (PE0486)		QB02	23205392	TRANSISTOR, 2SC5343UF-Y(BULK)
U02A KEY/RMT/LED (PE0486)		QB03	23205392	TRANSISTOR, 2SC5343UF-Y(BULK)
U02A KEY/RMT/LED (PE0486)		RB08	76011470	RESISTOR, CHIP, 1/20W 47 OHM J
U02A KEY/RMT/LED (PE0486)		RB09	76011470	RESISTOR, CHIP, 1/20W 47 OHM J
U02A KEY/RMT/LED (PE0486)		RB10	76011181	RESISTOR, CHIP, 1/20W 180 OHM J
U02A KEY/RMT/LED (PE0486)		RB11	76011181	RESISTOR, CHIP, 1/20W 180 OHM J
U02A KEY/RMT/LED (PE0486)		RB12	76011181	RESISTOR, CHIP, 1/20W 180 OHM J
U02A KEY/RMT/LED (PE0486)		RB13	76011152	RESISTOR, CHIP, 1/20W 1.5K OHM J
U02A KEY/RMT/LED (PE0486)		RB14	76011101	RESISTOR, CHIP, 1/20W 100 OHM J
U02A KEY/RMT/LED (PE0486)		RB18	76011332	RESISTOR, CHIP, 1/20W 3.3K OHM J
U02A KEY/RMT/LED (PE0486)		RB22	76000445	CHIP JUMPER, 1608TYPE
U02A KEY/RMT/LED (PE0486)		RB31	76000445	CHIP JUMPER, 1608TYPE
U02A KEY/RMT/LED (PE0486)		RB32	76011132	RESISTOR, CHIP, 1/20W 1.3K OHM J
U02A KEY/RMT/LED (PE0486)		RB33	76011622	RESISTOR, CHIP, 1/20W 6.2K OHM J
U02A KEY/RMT/LED (PE0486)		RB71	76011362	RESISTOR, CHIP, 1/20W 3.6K OHM J
U02A KEY/RMT/LED (PE0486)		RB72	76011272	RESISTOR, CHIP, 1/20W 2.7K OHM J
U02A KEY/RMT/LED (PE0486)		RB73	76011182	RESISTOR, CHIP, 1/20W 1.8K OHM J
U02A KEY/RMT/LED (PE0486)		RB75	76000445	CHIP JUMPER, 1608TYPE
U02A KEY/RMT/LED (PE0486)		RB77	76011113	RESISTOR, CHIP, 1/20W 11K OHM J
U02A KEY/RMT/LED (PE0486)		RB79	76000445	CHIP JUMPER, 1608TYPE

PARTS LIST

Block : U03A MAIN_POWER (PE0579) 6

Location : Search

Parts No. : Search

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Block		Location	Parts No.	Description > S M L
U03A MAIN_POWER (PE0579)	*	U03A	75010985	PC BOARD ASSY, PE0579A1, MAIN_POWER
U03A MAIN_POWER (PE0579)	⚠	C801	76503510	CAPACITOR, PLASTIC FILM, LE224-C
U03A MAIN_POWER (PE0579)	⚠	C802	76503510	CAPACITOR, PLASTIC FILM, LE224-C
U03A MAIN_POWER (PE0579)		C803	76503169	CAPACITOR, PLASTIC FILM, 630V 0.1UF J
U03A MAIN_POWER (PE0579)		C804	76214103	CAPACITOR, CERAMIC DISC, 500V B 0.01UF K
U03A MAIN_POWER (PE0579)		C805	76092281	CAPACITOR, CERAMIC DISC, AC250V E 4700PF
U03A MAIN_POWER (PE0579)	⚠	C807	75002507	CAPACITOR, S08Y1Y5UYE102MBK
U03A MAIN_POWER (PE0579)		C810	76125035	CAPACITOR, ELECTROLYTIC, 450V 470UF M
U03A MAIN_POWER (PE0579)	⚠	C811	75002506	CAPACITOR, S08Y1Y5PYE471KBK
U03A MAIN_POWER (PE0579)	⚠	C812	75002506	CAPACITOR, S08Y1Y5PYE471KBK
U03A MAIN_POWER (PE0579)		C815	75005709	CAPACITOR, CHIP CERA, 50V B 0.47UF K, GRM21BB31H474KA87L
U03A MAIN_POWER (PE0579)		C816	76073090	CAPACITOR, ELECTROLYTIC, 50V 100UF M
U03A MAIN_POWER (PE0579)		C817	76092463	CAPACITOR, CERAMIC CHIP, 16V B 0.22UF K
U03A MAIN_POWER (PE0579)		C819	76105101	CAPACITOR, CERAMIC CHIP, 50V CH 100PF J
U03A MAIN_POWER (PE0579)		C820	76092796	CAPACITOR, CERAMIC CHIP, 50V B 0.22UF K
U03A MAIN_POWER (PE0579)		C821	76092343	CAPACITOR, CERAMIC DISC, 2KV 680PF K
U03A MAIN_POWER (PE0579)		C822	76092344	CAPACITOR, CERAMIC DISC, 2KV 820PF K
U03A MAIN_POWER (PE0579)		C823	76092341	CAPACITOR, CERAMIC DISC, 2KV R 470PF K
U03A MAIN_POWER (PE0579)		C824	76109102	CAPACITOR, CERAMIC CHIP, 50V B 1000PF K
U03A MAIN_POWER (PE0579)		C825	75004442	CAPACITOR, CERAMIC CHIP, 50V B 1UF K
U03A MAIN_POWER (PE0579)		C826	76092341	CAPACITOR, CERAMIC DISC, 2KV R 470PF K
U03A MAIN_POWER (PE0579)		C827	76678229	CAPACITOR, ELECTROLYTIC, 200V 2.2UF M
U03A MAIN_POWER (PE0579)		C883	76125039	CAPACITOR, ELECTROLYTIC, 35V 4700UF M
U03A MAIN_POWER (PE0579)		C890	76109103	CAPACITOR, CERAMIC CHIP, 50V B 0.01UF K
U03A MAIN_POWER (PE0579)		CE04	76092281	CAPACITOR, CERAMIC DISC, AC250V E 4700PF
U03A MAIN_POWER (PE0579)		CE07	75005709	CAPACITOR, CHIP CERA, 50V B 0.47UF K, GRM21BB31H474KA87L
U03A MAIN_POWER (PE0579)		CE08	75005708	CAPACITOR, CHIP CERA, 50V B 0.33UF K, C2012JB1H334KT
U03A MAIN_POWER (PE0579)		CE09	76669100	CAPACITOR, ELECTROLYTIC, 50V 10UF M
U03A MAIN_POWER (PE0579)		CE10	76125040	CAPACITOR, ELECTROLYTIC, 450V 120UF M
U03A MAIN_POWER (PE0579)		CE100	76092538	CAPACITOR, CERAMIC CHIP, 10V F 1UF Z
U03A MAIN_POWER (PE0579)		CE102	76109102	CAPACITOR, CERAMIC CHIP, 50V B 1000PF K
U03A MAIN_POWER (PE0579)	⚠	CE11	75002506	CAPACITOR, S08Y1Y5PYE471KBK

PARTS LIST

Block : Miscellaneous 6

Location : Search

Parts No. : Search

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Block		Location	Parts No.	Description > S M L
Miscellaneous	⚠	B001A	75008814	LCD PANEL, G7LPL42WX7, LC420WX7-SLC1
Miscellaneous	⚠	B001B	75011173	LCD PANEL, LC420WXN-SAB1(new)
Miscellaneous		B230	23748087	WASHER, 10X4.2XT0.3TPO
Miscellaneous		E900A	75014014	SHIELD CASE, INVERTER for new Panel
Miscellaneous		H001	75010341	TUNER, TAEA-G081D
Miscellaneous		MZ01	75011127	WIRE, MF0156
Miscellaneous		P801	23372355	POWER CORD, UK-HK VO 6A F13A 250V, MP5004-2
Miscellaneous		P801	23372368	POWER CORD, CEE FL M5206 250V2 206 - 2.3M HOUSING
Miscellaneous		PP08	23974994	BAND, KESSOKU
Miscellaneous		W661	75010342	SPEAKER, SPK1503AM, 120X35 8OHM 10W
Miscellaneous		Z001	23103841	FERRITE CORE, TFE1014
Miscellaneous		Z001B	23466442	Gasket, SHIELD for new Panel

PARTS LIST

Block : Accessory 6

Location : Search

Parts No. : Search

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Block		Location	Parts No.	Description > S M L
Accessory		Y101	75010356	OWNERS MANUAL, ENG
Accessory		Y101E	75010358	OWNERS MANUAL, EURO
Accessory		Y101N	75010360	OWNERS MANUAL, NORDIC
Accessory		Y102E	75010359	OWNERS MANUAL, E EURO
Accessory		Y103	75010983	MANUAL, GOST CERT SHEET
Accessory		Y105	75010347	OWNERS MANUAL, STD EU
Accessory		Y110	75010357	OWNERS MANUAL, QSUG
Accessory		Y114	75010361	SCHEMTIC DIAGRAM
Accessory		Y130	75010355	REMOCON HAND UNIT, CT-90298
Accessory		Y170	23845800	HOLDER, WIRE, NYLON66 D6.8
Accessory		Y186	75009788	CLOTH, CLEAN, XF350P
Accessory		Y190	75010971	OWNERS MANUAL, CORRECTIONS, 500P

PARTS LIST

Block : Cabinet 6

Location : Search

Parts No. : Search

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Block		Location	Parts No.	Description > S M L
Cabinet		A201	75010959	FRNT BEZEL ASSY
Cabinet		A401	75010960	BACK COVER ASSY
Cabinet		A411	23717267	SCREW, BITTB4X16 SBN
Cabinet		A412	75010345	SCREW, BITTB3X8 SBN
Cabinet		A420	75010961	STAND STAY ASSY
Cabinet		A421	75011371	BASE, BASE COVER SET
Cabinet		A430	75005733	PIECE CLAMP HOLDER

PARTS LIST

Precaution

WARNING: BEFORE SERVICING THIS CHASSIS, READ THE "X-RAY RADIATION PRECAUTION" FOR DIRECT VIEW CTV ONLY, "SAFETY PRECAUTION" AND "PRODUCT SAFETY NOTICE" OF THIS MANUAL.

CAUTION: The international hazard symbols "⚠" in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list.

The mounting position of replacements is to be identical with originals. Before replacing any of these components, read carefully the SAFETY PRECAUTION and PRODUCT SAFETY NOTICE.

Do not degrade the safety of the receiver through improper servicing.

Note:

- The part number must be used when ordering parts, in order to assist in processing, be sure to include the Model number and Description.
- The PC board assembly with ✱ mark is no longer available after the end of the production.

Abbreviations

Capacitors	CD	:	Ceramic Disk
Resistors	CF	:	Carbon film
	OMF	:	Oxide Metal Film
	PF	:	Plastic Film
	CC	:	Carbon Composition
	VR	:	Variable Resistor
	EL	:	Electrolytic

MF : Metal Film
FR : Fusible Resistor

All CD and PF capacitors are ±5 %, 50 V and all resistor, ±5 %, 1/6 W unless otherwise noted.

PARTS LIST

Block : All Block 6

Location : Search

Parts No. : Search

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Block		Location	Parts No.	Description > S M L
U01AS SIGNAL (PE0484)	*	U01AS	75010399	PC BOARD ASSY, PE0484A, SIGNAL
U01AS SIGNAL (PE0484)		C101	76797220	CE04G1H220M
U01AS SIGNAL (PE0484)		C101A	23960136	AD TSE3843W
U01AS SIGNAL (PE0484)		C102	76109103	CK73B1H103K
U01AS SIGNAL (PE0484)		C103	76109103	CK73B1H103K
U01AS SIGNAL (PE0484)		C104	76109103	CK73B1H103K
U01AS SIGNAL (PE0484)		C105	76109103	CK73B1H103K
U01AS SIGNAL (PE0484)		C106	76109103	CK73B1H103K
U01AS SIGNAL (PE0484)		C107	76109102	CK73B1H102K
U01AS SIGNAL (PE0484)		C108	76797479	CE04G1H4R7M
U01AS SIGNAL (PE0484)		C109	76793471	CE04G1A471M
U01AS SIGNAL (PE0484)		C110	76793471	CE04G1A471M
U01AS SIGNAL (PE0484)		C112	76109103	CK73B1H103K
U01AS SIGNAL (PE0484)		C114	76109103	CK73B1H103K
U01AS SIGNAL (PE0484)		C115	76105330	CC73CH1H330J
U01AS SIGNAL (PE0484)		C116	76105330	CC73CH1H330J
U01AS SIGNAL (PE0484)		C156	76105470	CC73CH1H470J
U01AS SIGNAL (PE0484)		C158	76203100	CE04WS1C100M
U01AS SIGNAL (PE0484)		C159	76092730	CK73B1C104K
U01AS SIGNAL (PE0484)		C457	76092731	CK732B1C105K
U01AS SIGNAL (PE0484)		C460	76109221	CK73B1H221K
U01AS SIGNAL (PE0484)		C461	76109152	CK73B1H152K
U01AS SIGNAL (PE0484)		C462	76109222	CK73B1H222K
U01AS SIGNAL (PE0484)		C463	76092730	CK73B1C104K
U01AS SIGNAL (PE0484)		C601	76669229	CE04Q1H2R2M
U01AS SIGNAL (PE0484)		C602	76109473	CK73B1E473K
U01AS SIGNAL (PE0484)		C603	76669479	CE04Q1H4R7M
U01AS SIGNAL (PE0484)		C604	76669479	CE04Q1H4R7M
U01AS SIGNAL (PE0484)		C605	76092883	CK73B1H104K
U01AS SIGNAL (PE0484)		C606	76092883	CK73B1H104K
U01AS SIGNAL (PE0484)		C607	76109473	CK73B1E473K
U01AS SIGNAL (PE0484)		C608	76667100	CE04Q1E100M

PARTS LIST

Block : U01AS SIGNAL (PE0484) 6

Location : Search

Parts No. : Search

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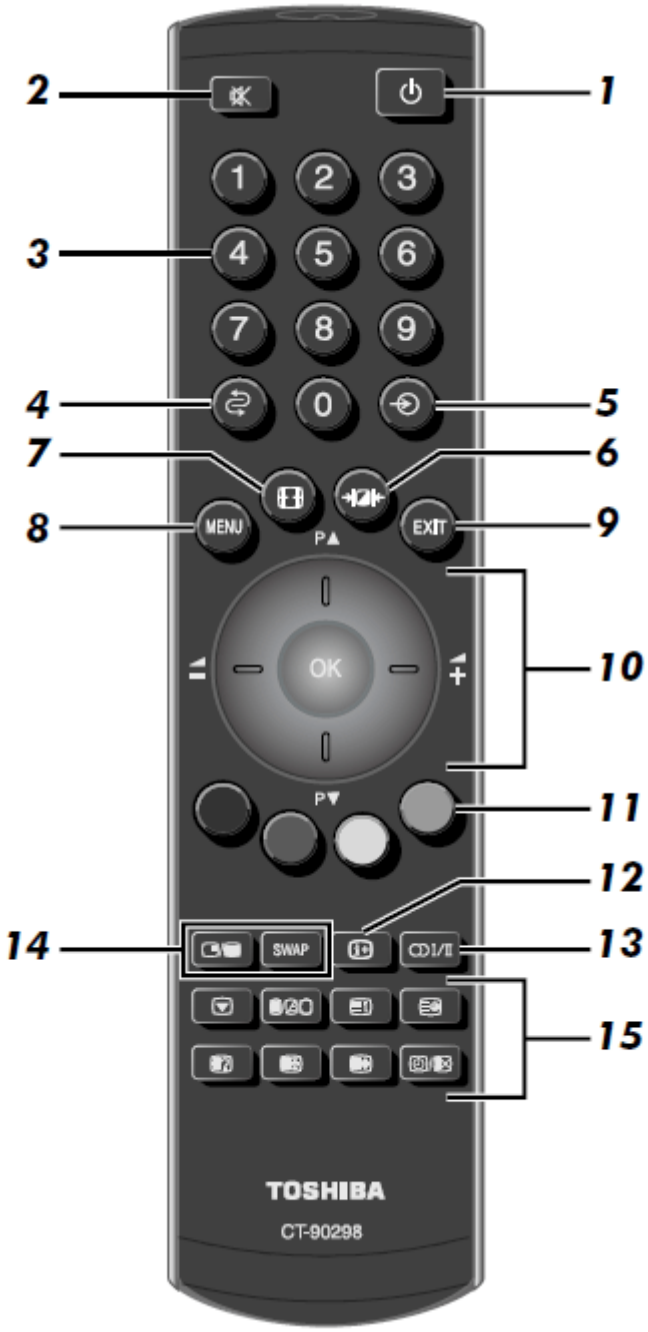
Block		Location	Parts No.	Description > S M L
U01AS SIGNAL (PE0484)	*	U01AS	75010399	PC BOARD ASSY, PE0484A, SIGNAL
U01AS SIGNAL (PE0484)		C101	76797220	CE04G1H220M
U01AS SIGNAL (PE0484)		C101A	23960136	AD TSE3843W
U01AS SIGNAL (PE0484)		C102	76109103	CK73B1H103K
U01AS SIGNAL (PE0484)		C103	76109103	CK73B1H103K
U01AS SIGNAL (PE0484)		C104	76109103	CK73B1H103K
U01AS SIGNAL (PE0484)		C105	76109103	CK73B1H103K
U01AS SIGNAL (PE0484)		C106	76109103	CK73B1H103K
U01AS SIGNAL (PE0484)		C107	76109102	CK73B1H102K
U01AS SIGNAL (PE0484)		C108	76797479	CE04G1H4R7M
U01AS SIGNAL (PE0484)		C109	76793471	CE04G1A471M
U01AS SIGNAL (PE0484)		C110	76793471	CE04G1A471M
U01AS SIGNAL (PE0484)		C112	76109103	CK73B1H103K
U01AS SIGNAL (PE0484)		C114	76109103	CK73B1H103K
U01AS SIGNAL (PE0484)		C115	76105330	CC73CH1H330J
U01AS SIGNAL (PE0484)		C116	76105330	CC73CH1H330J
U01AS SIGNAL (PE0484)		C156	76105470	CC73CH1H470J
U01AS SIGNAL (PE0484)		C158	76203100	CE04WS1C100M
U01AS SIGNAL (PE0484)		C159	76092730	CK73B1C104K
U01AS SIGNAL (PE0484)		C457	76092731	CK732B1C105K
U01AS SIGNAL (PE0484)		C460	76109221	CK73B1H221K
U01AS SIGNAL (PE0484)		C461	76109152	CK73B1H152K
U01AS SIGNAL (PE0484)		C462	76109222	CK73B1H222K
U01AS SIGNAL (PE0484)		C463	76092730	CK73B1C104K
U01AS SIGNAL (PE0484)		C601	76669229	CE04Q1H2R2M
U01AS SIGNAL (PE0484)		C602	76109473	CK73B1E473K
U01AS SIGNAL (PE0484)		C603	76669479	CE04Q1H4R7M
U01AS SIGNAL (PE0484)		C604	76669479	CE04Q1H4R7M
U01AS SIGNAL (PE0484)		C605	76092883	CK73B1H104K
U01AS SIGNAL (PE0484)		C606	76092883	CK73B1H104K
U01AS SIGNAL (PE0484)		C607	76109473	CK73B1E473K
U01AS SIGNAL (PE0484)		C608	76667100	CE04Q1E100M

FUNCTION AND OPERATION

The Remote Control

Simple at-a-glance reference of your remote control.



1 For On/Standby mode

2 To mute the sound

3 Number buttons

4 To return to the previous programme

5 To select input from external sources

6 Selectable picture preferences

7 Widescreen viewing

8 On-screen Menus

9 To exit Menus

10 Navigation Ring:

Use P▲ and P▼ to change programme positions and text pages
Use − and + to alter the volume
When using menus press P▲ (up), P▼ (down), − (left) and + (right) to move the cursor on the screen. OK to confirm your selection

11 Text control buttons

12 To display on-screen information

13 Stereo/bilingual transmissions

14 No function on this model

15 **When in TV mode:**

▼	Still picture
⏱/EX	Time display
☰/◪/▢	To call up text

When in Text mode:

i	To access index page
◕	To access Sub pages
?	To reveal concealed text
⧗	To hold a wanted page
↕	To enlarge text display size
⏱/EX	To select a page whilst viewing a normal picture